

FIG. 1

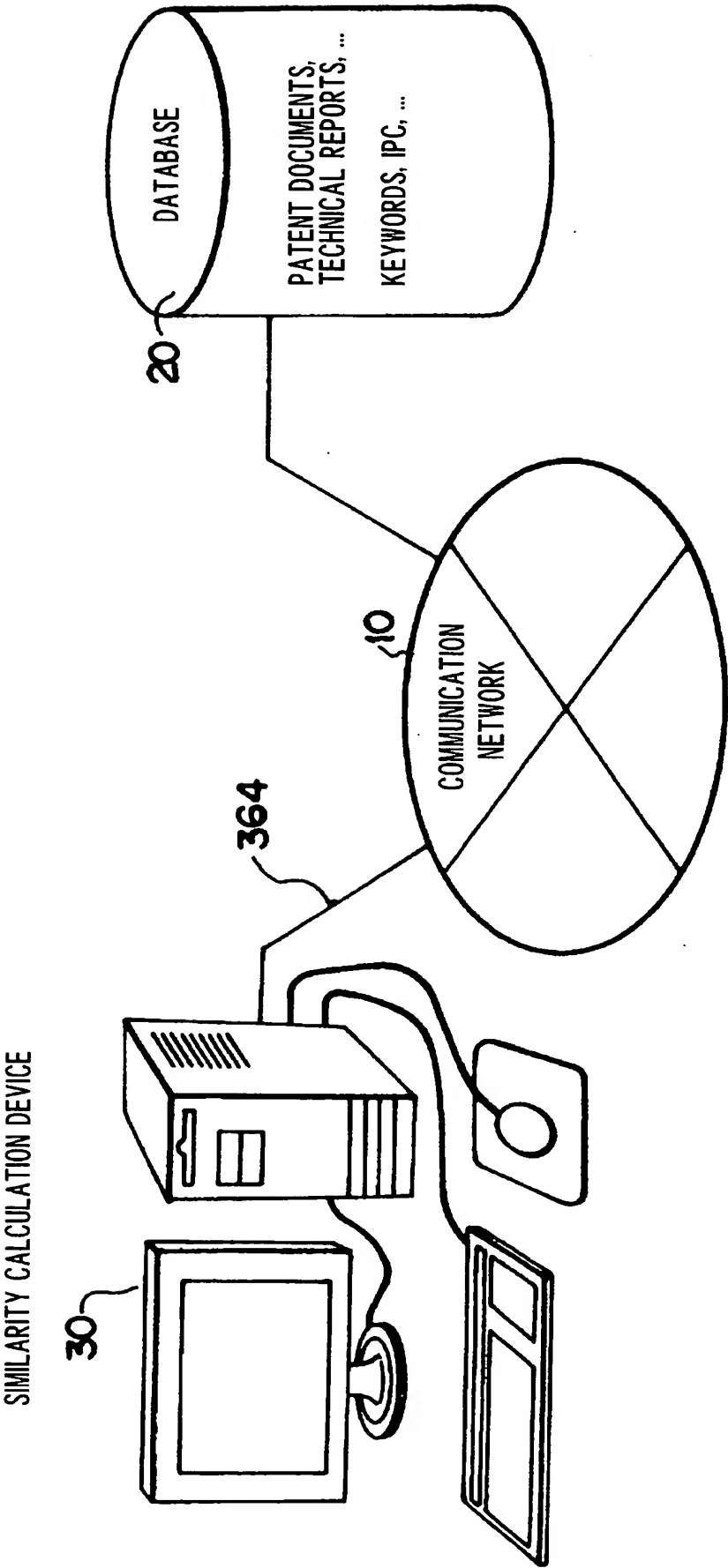


FIG. 2

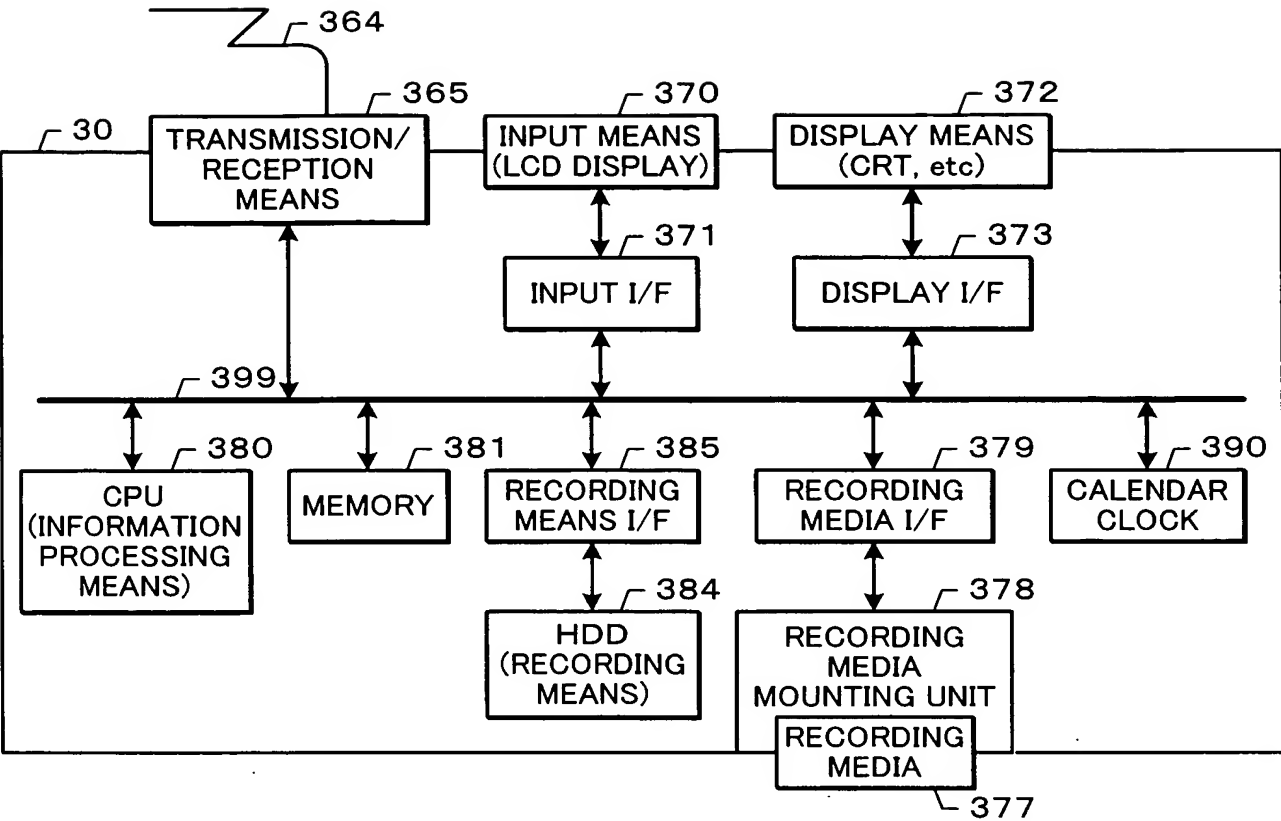


FIG. 3

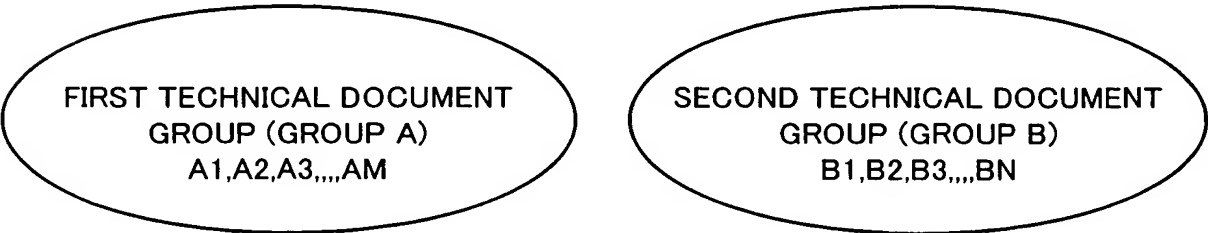


FIG. 4

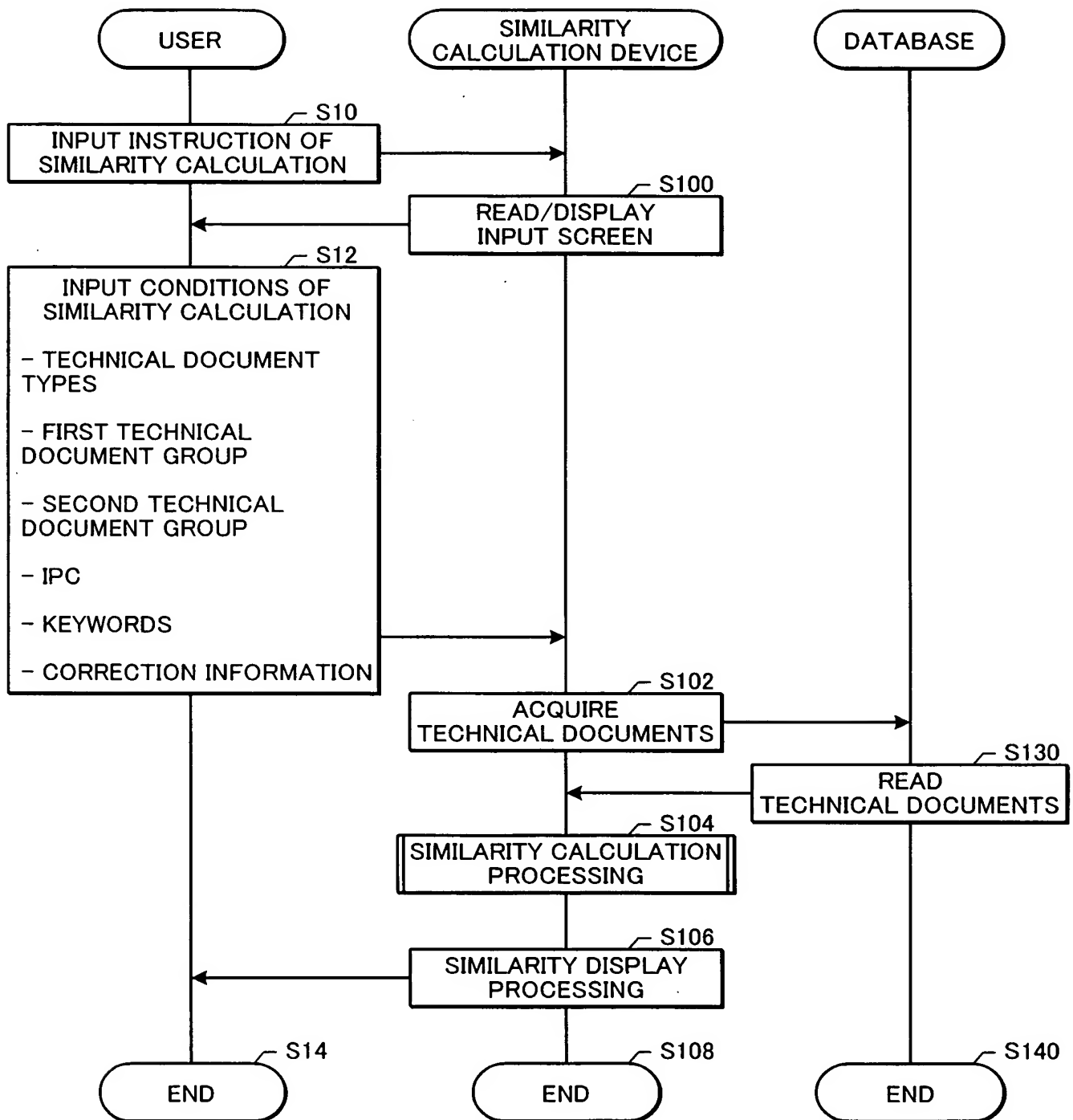


FIG. 5

## - INPUT SCREEN -

## 1. INPUT CLUSTER ANALYSIS CONDITIONS

## (1) DOCUMENTS FOR PROCESSING

|                        |   |
|------------------------|---|
|                        | ▼ |
| 1. PATENT PUBLICATIONS |   |
| 2. TECHNICAL DOCUMENTS |   |
| :                      |   |
| :                      |   |
| :                      |   |
| 3. ALL DOCUMENTS       |   |

## (2) PORTIONS FOR PROCESSING

|                |   |
|----------------|---|
|                | ▼ |
| 1. ENTIRE TEXT |   |
| 2. CLAIMS ONLY |   |
| :              |   |
| :              |   |
| :              |   |
| :              |   |

## (3) CRITERIA FOR CLUSTER ANALYSIS

|                |   |
|----------------|---|
|                | ▼ |
| 1. IPC " "     |   |
| 2. KEYWORD " " |   |
| :              |   |
| :              |   |
| :              |   |
| :              |   |

## 2. DOCUMENT GROUPS EXTRACTION CONDITIONS

## FIRST DOCUMENT GROUP

## (1) TIME PERIOD

☒ DATES 03/06/13 ▼ 03/09/11 ▼  
☐ LAST — ▲ MONTHS  
☐ LAST — ▲ DAYS

## SECOND DOCUMENT GROUP

## (1) TIME PERIOD

☐ DATES 03/09/11 ▼ — ▼  
☒ LAST 6 ▲ MONTHS  
☐ LAST — ▲ DAYS

## (2) INDUSTRY

|                       |   |
|-----------------------|---|
| SELECT FROM BELOW     | ▼ |
| 1. TELECOMMUNICATION  |   |
| 2. ELECTRIC APPLIANCE |   |
| 3. FINANCE            |   |
| 4. ...                |   |

## (2) INDUSTRY

|                       |   |
|-----------------------|---|
| SELECT FROM BELOW     | ▼ |
| 1. TELECOMMUNICATION  |   |
| 2. ELECTRIC APPLIANCE |   |
| 3. FINANCE            |   |
| 4. ...                |   |

## (3) NAME OF COMPANY/INDIVIDUAL

|                   |   |
|-------------------|---|
| SELECT FROM BELOW | ▼ |
| 1. COMPANY ○○○○   |   |
| 2. COMPANY △△△△   |   |
| 3. ...            |   |
| 4. ...            |   |

## (3) NAME OF COMPANY/INDIVIDUAL

|                   |   |
|-------------------|---|
| SELECT FROM BELOW | ▼ |
| 1. COMPANY ○○○○   |   |
| 2. COMPANY △△△△   |   |
| 3. ...            |   |
| 4. ...            |   |

## 3. CORRECTION METHOD

## CORRECTION TERM 1

|                        |   |
|------------------------|---|
| 2. NUMBER OF DOCUMENTS | ▼ |
| 1. NONE                |   |
| 2. NUMBER OF DOCUMENTS |   |
| 3. ...                 |   |
| 4. ...                 |   |
| 5. ...                 |   |

## CORRECTION TERM 2

|                                |   |
|--------------------------------|---|
| 4.EXPECTATION VALUE DIFFERENCE | ▼ |
| 1. NONE                        |   |
| 2. PROBABILITY                 |   |
| 3. INTERMIXING RATIO           |   |
| 4.EXPECTATION VALUE DIFFERENCE |   |
| 5. ...                         |   |

FIG. 6

- SIMILARITY DISPLAY SCREEN -

1. CLUSTER ANALYSIS CONDITIONS

1. PATENT PUBLICATIONS, 2. TECHNICAL DOCUMENTS,  
7. KEYWORD "TELEPHONE", ...

2. DOCUMENT GROUPS EXTRACTION CONDITIONS

FIRST DOCUMENT GROUP

|                     |                      |
|---------------------|----------------------|
| (1) TIME PERIOD     | 03/06/13 - 03/09/11  |
| (2) INDUSTRY        | 1. TELECOMMUNICATION |
| (3) NAME OF COMPANY | 1. COMPANY ○○○○      |
| (4) OTHERS          |                      |

SECOND DOCUMENT GROUP

|                     |                       |
|---------------------|-----------------------|
| (1) TIME PERIOD     | 03/06/13 - 03/12/13   |
| (2) INDUSTRY        | 2. ELECTRIC APPLIANCE |
| (3) NAME OF COMPANY | 2. COMPANY △△△△       |
| (4) OTHERS          |                       |

3. CONDITIONS OF CORRECTION METHOD

CORRECTION TERM 1 = 2, CORRECTION TERM 2 = 4,  
CORRECTION TERM 3 = 0.300

4. SIMILARITY CALCULATION RESULT

|            |       |
|------------|-------|
| SIMILARITY | 0.935 |
|------------|-------|

5. CONTENTS OF CLUSTERS OBTAINED

|                   | CLUSTER 1 | CLUSTER 2       | ... | ... |
|-------------------|-----------|-----------------|-----|-----|
| CRITERIA          | G06F17/30 | TEXT PROCESSING | ... | ... |
| CORRECTION TERM 1 | 3.774     | 0.075           | ... | ... |
| CORRECTION TERM 2 | 0.971     | 0.971           | ... | ... |
| CORRECTION TERM 3 | 1.000     | 1.000           | ... | ... |

6. CONDITIONS OF SIMILARITY CALCULATION

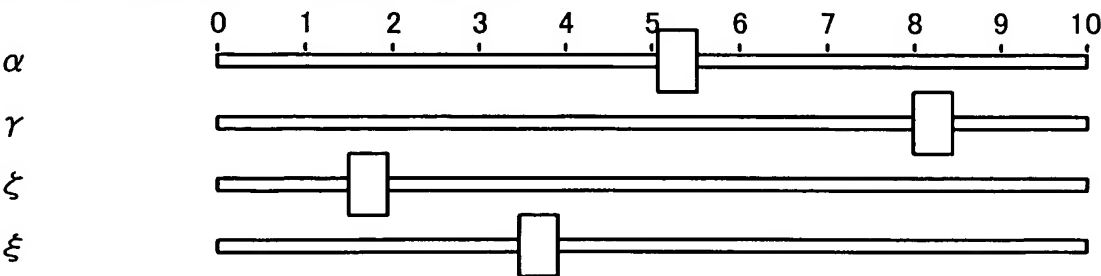


FIG. 7

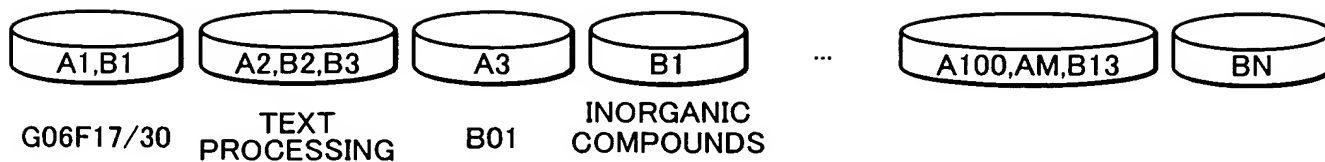


FIG. 8

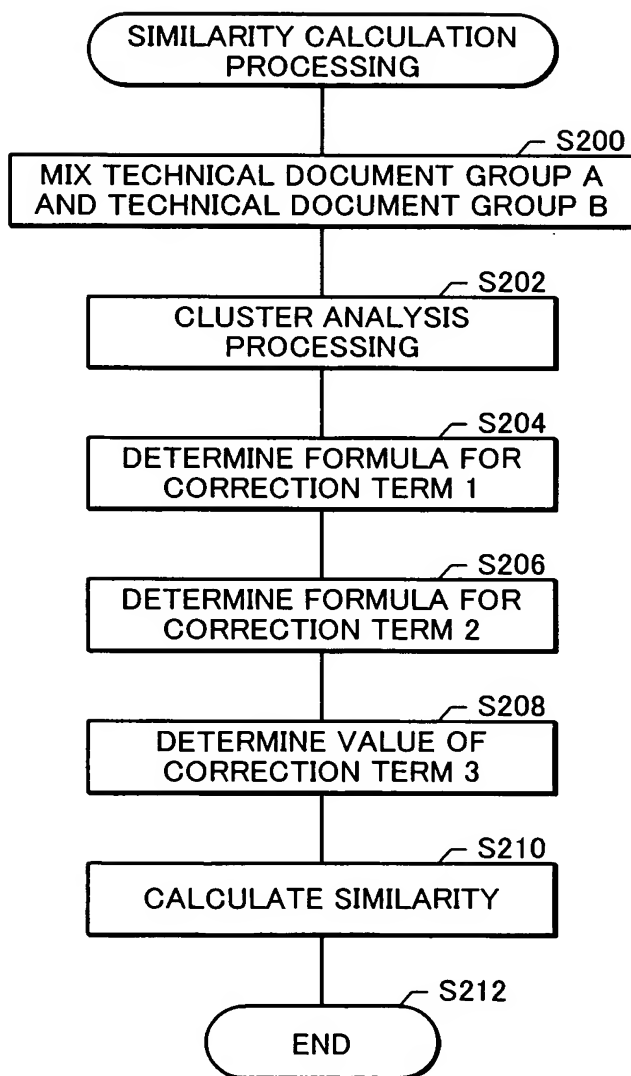


FIG. 9

| CONDITIONS                               |   | CONDITION<br>1 | CONDITION<br>2 | CONDITION<br>3 | CONDITION<br>4 |
|--|---|----------------|----------------|----------------|----------------|
| FIRST<br>TECHNICAL<br>DOCUMENT<br>GROUP  | NUMBER OF<br>TECHNICAL<br>DOCUMENTS M     | 6              | 104            | 104            | 104            |
| SECOND<br>TECHNICAL<br>DOCUMENT<br>GROUP | NUMBER OF<br>TECHNICAL<br>DOCUMENTS N     | 6              | 55             | 55             | 55             |
| TOTAL NUMBER OF<br>TECHNICAL DOCUMENTS   |   | 12             | 159            | 159            | 159            |
| CLUSTER 1                                | NUMBER OF<br>TECHNICAL<br>DOCUMENTS m1    | 2              | 100            | 20             | 2              |
|  | NUMBER OF<br>TECHNICAL<br>DOCUMENTS n1    | 1              | 50             | 50             | 50             |
|  | TOTAL NUMBER<br>OF TECHNICAL<br>DOCUMENTS | 3              | 150            | 70             | 52             |
| CLUSTER 2                                | NUMBER OF<br>TECHNICAL<br>DOCUMENTS m2    | 2              | 2              | 2              | 20             |
|  | NUMBER OF<br>TECHNICAL<br>DOCUMENTS n2    | 1              | 1              | 1              | 1              |
|  | TOTAL NUMBER<br>OF TECHNICAL<br>DOCUMENTS | 3              | 3              | 3              | 21             |
| CLUSTER 3                                | NUMBER OF<br>TECHNICAL<br>DOCUMENTS m3    | 2              | 2              | 82             | 82             |
| CLUSTER 4                                | NUMBER OF<br>TECHNICAL<br>DOCUMENTS n4    | 4              | 4              | 4              | 4              |
| EXPECTED<br>SIMILARITY<br>VALUE          | TOLERANCE<br>$\pm 0.050$                  | 0.300          | 0.900          | 0.200          | 0.050          |

FIG. 10

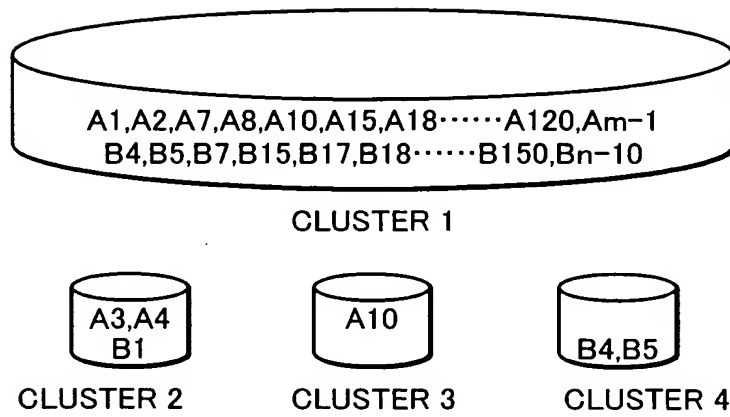


FIG. 11

SIMILARITY CALCULATION EXAMPLES BY EQUATION 4  
WHEN  $\alpha=1$ , CORRECTION TERM 2=1, CORRECTION TERM 3=1

| SIMILARITY CALCULATION EXAMPLES |                                       | CONDITION 1 | CONDITION 2 | CONDITION 3 | CONDITION 4 |
|---------------------------------|---------------------------------------|-------------|-------------|-------------|-------------|
| $(M+N)/4$                       |                                       | 12/4        | 159/4       | 159/4       | 159/4       |
| CLUSTER 1                       | NUMBER OF TECHNICAL DOCUMENTS (m1+n1) | 3           | 150         | 70          | 52          |
|                                 | VALUE OF CORRECTION TERM 1            | 1           | 3.774       | 1.761       | 1.308       |
| CLUSTER 2                       | NUMBER OF TECHNICAL DOCUMENTS (m2+n2) | 3           | 3           | 3           | 21          |
|                                 | VALUE OF CORRECTION TERM 1            | 1           | 0.075       | 0.075       | 0.528       |
| SIMILARITY (EQUATION 4)         |                                       | 0.5         | 0.962       | 0.459       | 0.459       |

FIG. 12

SIMILARITY CALCULATION EXAMPLES BY EQUATION 10  
WHEN  $\gamma=1$ , CORRECTION TERM 1=1, CORRECTION TERM 3=1

| SIMILARITY CALCULATION EXAMPLES |  | CONDITION 1 | CONDITION 2 | CONDITION 3 | CONDITION 4 |
|---------------------------------|--|-------------|-------------|-------------|-------------|
| CLUSTER 1                       | INTERMIXING PROBABILITY                  | 0.409       | 0.113       | 0.000       | 0.000       |
|                                 | MAXIMUM VALUE OF INTERMIXING PROBABILITY | 0.409       | 0.280       | 0.133       | 0.141       |
|                                 | VALUE OF CORRECTION TERM 2(1)            | 1           | 0.404       | 0.000       | 0.000       |
| CLUSTER 2                       | INTERMIXING PROBABILITY                  | 0.409       | 0.448       | 0.448       | 0.001       |
|                                 | MAXIMUM VALUE OF INTERMIXING PROBABILITY | 0.409       | 0.448       | 0.448       | 0.194       |
|                                 | VALUE OF CORRECTION TERM 2(1)            | 1           | 1           | 1           | 0.004       |
| SIMILARITY (EQUATION 10)        |  | 0.5         | 0.351       | 0.25        | 0.001       |

FIG. 13

SIMILARITY CALCULATION EXAMPLES WHEN ADOPTING  
CORRECTION TERM 1(1) AND CORRECTION TERM 2(1)

| SIMILARITY CALCULATION EXAMPLES                              |   | CONDITION 1 | CONDITION 2 | CONDITION 3 | CONDITION 4 |
|--|---|-------------|-------------|-------------|-------------|
| CLUSTER 1  | VALUE OF CORRECTION TERM 1                      | 1           | 3.774       | 1.761       | 1.308       |
|  | VALUE OF CORRECTION TERM 2(1)                   | 1           | 0.404       | 0.000       | 0.000       |
|  | CORRECTION TERM 1 $\times$ CORRECTION TERM 2(1) | 1           | 1.525       | 0.000       | 0.000       |
| CLUSTER 2  | VALUE OF CORRECTION TERM 1                      | 1           | 0.075       | 0.075       | 0.528       |
|  | VALUE OF CORRECTION TERM 2(1)                   | 1           | 1           | 1           | 0.004       |
|  | CORRECTION TERM 1 $\times$ CORRECTION TERM 2(1) | 1           | 0.075       | 0.075       | 0.002       |
| SIMILARITY (CORRECTION TERM 1 $\times$ CORRECTION TERM 2(1)) |   | 0.5         | 0.4         | 0.019       | 0.0005      |

FIG. 14

SIMILARITY CALCULATION EXAMPLES BY EQUATION 26  
WHEN  $\xi=1$ , CORRECTION TERM 1=1, CORRECTION TERM 3=1

| SIMILARITY CALCULATION EXAMPLES |                               | CONDITION 1 | CONDITION 2 | CONDITION 3 | CONDITION 4 |
|---------------------------------|-------------------------------|-------------|-------------|-------------|-------------|
| N/M                             |                               | 1           | 0.529       | 0.529       | 0.529       |
| CLUSTER 1                       | n1/m1                         | 0.5         | 0.5         | 2.5         | 25          |
|                                 | VALUE OF CORRECTION TERM 2(2) | 0.5         | 0.945       | 0.212       | 0.021       |
| CLUSTER 2                       | n2/m2                         | 0.5         | 0.5         | 0.5         | 0.05        |
|                                 | VALUE OF CORRECTION TERM 2(2) | 0.5         | 0.945       | 0.945       | 0.095       |
| SIMILARITY (EQUATION 26)        |                               | 0.25        | 0.473       | 0.289       | 0.029       |

FIG. 15

SIMILARITY CALCULATION EXAMPLES WHEN ADOPTING  
CORRECTION TERM 1(1) AND CORRECTION TERM 2(2)

| SIMILARITY CALCULATION EXAMPLES                              |   | CONDITION 1 | CONDITION 2 | CONDITION 3 | CONDITION 4 |
|--|---|-------------|-------------|-------------|-------------|
| CLUSTER 1  | VALUE OF CORRECTION TERM 1                      | 1           | 3.774       | 1.761       | 1.308       |
|  | VALUE OF CORRECTION TERM 2(2)                   | 0.5         | 0.945       | 0.212       | 0.021       |
|  | CORRECTION TERM 1 $\times$ CORRECTION TERM 2(2) | 0.5         | 3.566       | 0.373       | 0.027       |
| CLUSTER 2  | VALUE OF CORRECTION TERM 1                      | 1           | 0.075       | 0.075       | 0.528       |
|  | VALUE OF CORRECTION TERM 2(2)                   | 0.5         | 0.945       | 0.945       | 0.095       |
|  | CORRECTION TERM 1 $\times$ CORRECTION TERM 2(2) | 0.5         | 0.071       | 0.071       | 0.050       |
| SIMILARITY (CORRECTION TERM 1 $\times$ CORRECTION TERM 2(2)) |   | 0.25        | 0.909       | 0.111       | 0.019       |

FIG. 16

EXPECTATION VALUE DIFFERENCE CALCULATION EXAMPLES  
WHEN CONDITIONS 1-4 ARE SUBSTITUTED INTO EQUATION 31

| EXPECTATION VALUE<br>DIFFERENCE CALCULATION<br>EXAMPLES |                                    | CONDITION<br>1 | CONDITION<br>2 | CONDITION<br>3 | CONDITION<br>4 |
|---|------------------------------------|----------------|----------------|----------------|----------------|
| CLUSTER 1   | $n1 \times M$                      | 6              | 5,200          | 5,200          | 5,200          |
|   | $m1 \times N$                      | 12             | 5,500          | 1,100          | 110            |
|   | EXPECTATION<br>VALUE<br>DIFFERENCE | 0.5            | 1.887          | 25.786         | 32.013         |
| CLUSTER 2   | $n2 \times M$                      | 6              | 104            | 104            | 104            |
|   | $m2 \times N$                      | 12             | 110            | 110            | 1,100          |
|   | EXPECTATION<br>VALUE<br>DIFFERENCE | 0.5            | 0.038          | 0.038          | 6.264          |

FIG. 17

SIMILARITY CALCULATION EXAMPLES BY EQUATION 32  
WHEN  $\xi=10$ , CORRECTION TERM 1=1, CORRECTION TERM 3=1

| SIMILARITY CALCULATION<br>EXAMPLES |                                     | CONDITION<br>1 | CONDITION<br>2 | CONDITION<br>3 | CONDITION<br>4 |
|------------------------------------|-------------------------------------|----------------|----------------|----------------|----------------|
| CLUSTER 1                          | EXPONENT FOR<br>$\xi$               | 0.167          | 0.013          | 0.368          | 0.616          |
|                                    | VALUE OF<br>CORRECTION<br>TERM 2(3) | 0.681          | 0.971          | 0.429          | 0.242          |
| CLUSTER 2                          | EXPONENT FOR<br>$\xi$               | 0.167          | 0.013          | 0.013          | 0.298          |
|                                    | VALUE OF<br>CORRECTION<br>TERM 2(3) | 0.681          | 0.971          | 0.979          | 0.504          |
| SIMILARITY (EQUATION 32)           |                                     | 0.340          | 0.485          | 0.350          | 0.187          |

FIG. 18

SIMILARITY CALCULATION EXAMPLES WHEN ADOPTING  
CORRECTION TERM 1(1) AND CORRECTION TERM 2(3)

| SIMILARITY CALCULATION<br>EXAMPLES                          |   | CONDITION<br>1 | CONDITION<br>2 | CONDITION<br>3 | CONDITION<br>4 |
|---|---|----------------|----------------|----------------|----------------|
| CLUSTER 1   | VALUE OF<br>CORRECTION<br>TERM 1                  | 1              | 3.774          | 1.761          | 1.308          |
|   | VALUE OF<br>CORRECTION<br>TERM 2(3)               | 0.681          | 0.971          | 0.429          | 0.242          |
|   | CORRECTION<br>TERM 1 ×<br>CORRECTION<br>TERM 2(3) | 0.681          | 3.665          | 0.755          | 0.317          |
| CLUSTER 2   | VALUE OF<br>CORRECTION<br>TERM 1                  | 1              | 0.075          | 0.075          | 0.528          |
|   | VALUE OF<br>CORRECTION<br>TERM 2(3)               | 0.681          | 0.971          | 0.971          | 0.504          |
|   | CORRECTION<br>TERM 1 ×<br>CORRECTION<br>TERM 2(3) | 0.681          | 0.073          | 0.073          | 0.266          |
| SIMILARITY<br>(CORRECTION TERM 1 ×<br>CORRECTION TERM 2(3)) |   | 0.340          | 0.935          | 0.207          | 0.146          |

FIG. 19

